

ER IM 71-88
North Vietnam's Capability to Continue to Wage War

	Apr 1971	ER IM 71-56, <u>Economic Developments in North Vietnam In 1970, April 1971</u>
25X1	10 May 71	[redacted] to DD/OER Blue Note forwarding Blind Memo re Methodologies Involved in Estimating Equipment and Munitions Deliveries to North Vietnam
25X1	14 May 71	[redacted] Blind Memo re Routing of Publications to the White House
	May 1971	ER IM 71-88, <u>North Vietnam's Capability To Continue To Wage War</u> (distribution list attached)
25X1	No Date	[redacted] note re dissemination of IM 71-88
	21 May 71	Blind Memo, <u>North Vietnam's Capability to Continue to Wage War, ER IM 71-88</u> (discussing what was analyzed in IM 71-88)

NSA review completed

OSD REVIEW COMPLETE

DIA Review Completed.

ARMY review completed.

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21 May 1971

North Vietnam's Capability to Continue to
Wage War

ER IM 71-88

In this study we analyzed North Vietnam's physical and material capabilities -- i.e. -- its human and logistic resources to continue with the war.

As parameters to measure capabilities we used for manpower a maximum requirement of 250,000 to 300,000 and for logistics, 80,000 -88,000 tons, both being the inputs needed to sustain the maximum case for a general countrywide offensive strategy.

Since North Vietnam has with the exception of manpower few of the resources needed to support the war we also surveyed the general economic situation in North Vietnam and the role of foreign military and economic aid.

Manpower

During 1965 more than 1 million North Vietnamese have been inducted. This has brought about a decline in the civilian manpower reserve of from 1/3 to 1/2 depending on age group:

	<u>15 - 39</u>	<u>17 - 35</u>
1964	2 million	1.6 million
1970	1.3 million	.8 million

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We estimate the pool at the end of 1970 to be 800,000 - 1.3 million.

The drawdowns have been large but in relative terms Hanoi's manpower burden has been lighter than Saigon's:

GVN - 1.1 million = 46% of 2.4 million
males aged 18-39

DRV - 600,000 = 21% of 2.9 million males
aged 18-39

The existing reserves would support any of our strategies through 1972.

-- a drawdown of 100,000 a year could be sustained without any drawdown of reserves

-- a drawdown of 300,000 would drawdown reserves at about 200,000 a year reducing the pool to very low levels -- 400,000 - 900,000

But these drawdowns are not without costs. In addition to around 600,000 KIA the North Vietnamese have paid

	<u>1/65</u>	<u>should be</u>	<u>is</u>
-- Labor force	9.4 million	10.6	9.9
-- CNP	1.6 billion	2.1	1.4
-- Morale -- we can't measure this but don't see it putting a constraint on Hanoi's options			

The most direct manpower constraint is in training. A maximum capability is 250,000 a year. If they were starting from scratch it would take more than a year to train the forces for a maximum offensive.

But given the high rate of induction in 1970 -- 200,000 -- they may have a good start on the training programs.

Materiel

North Vietnam produces little of the goods necessary to support. Indeed it is heavily dependent on external sources for the wherewithal to exist:

- virtually all military equipment
- 15% (650 - 700,000 tons) of foodstuffs
- all POL (360,000 tons).

The economy is at about 85-90% of pre-bombing levels compared to low points of 65% for industry in 1967 and 80% for agriculture in 1968.

Foreign Aid

Economic Aid

1955-64 \$950 million providing 2/3 of input

1965 - 70 \$2 billion = 90% of imports

(60% Soviet)

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Military Aid

1955 - 64	140 million
1965 - 70	2.1 billion
	(70% Soviet)

Military aid peaked at \$650 million in 1967, and declined each year to \$155 million in 1970. China provided 55% of 1970 aid and for the first time became predominant supplier.

At todays levels Chinese military aid is 60% of 1967 peak of \$145 million. Soviet is 15% of 1967 peak of \$505 million.

Two thirds of today's deliveries are ammunition, 1/5 ground force equipment reflecting changing character of North Vietnam's needs after the US bombing stopped.

Other important aid items

- 360,000 tons of POL
- 7,000 tons of explosives
- 1,800 tons of pharmaceuticals
- 5,000 tons trucks

Resources

Outlook

We estimate deliveries to date insure DRV has adequate stockpiles -- generally at the 6 month level. Truck inventories (15-20,000) and war-supporting

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material seem to be held at levels sufficient to permit any contingent withdrawals. POL supplies estimated at 3 months.

Either USSR or China can continue or expand deliveries to necessary levels. The 1970 level of military aid is 25% less than 1967 peaks and could be quickly expanded.

Even if Hanoi became dependent on only one of its major donors either could pick up the tab for the goods needed for the type of war now being fought in South Vietnam.

Logistic Base

Finally we looked at North Vietnam's logistic base to move supplies south to the battlefields. Hanoi has consistently maintained, expanded and built redundancy into what is now a vastly improved logistic system. On all counts -- port facilities, rail (up 15%) and roads (1500 new miles) waterways and pipelines -- all add up to a system fully capable of meeting the maximum logistic burden we have measured in our various strategic options.

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You had a call on the green line on Friday morning from Frank Hand. I talked with him. He said that Secretary Laird wanted 3 more copies of -ER IM 71-88. He, Mr. Hand, had given Laird Packard's copy when it was delivered on Friday morning, since Packard was still out of town.

I told Mr. Hand that I did not have the authority to release the report, that the dissemination was in the hands of the Director. He said he would call the Director's office and ask for the 3 copies.

Five minutes later a call came in from  (Exec Asst to Mr. Helms) asking for some background on the report. I gave him the title and mentioned that the report could not be released unless the DCI said OK.


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 sent in a note to Mr. Helms with the request, and asked if I would bring up the reports in case the answer was yes. They would send directly out via Ex. Registry.

I picked up copy # 5 from SAVA and 2 copies from Joyce.

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Called about 4 and was told that Mr. Helms released 2 copies of the report -- nos. 5 and 26 were sent over to Laird.  is reading copy no. 27, but will return when finished.

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MEMORANDUM FOR: The Hon. David Packard

Attached is the CIA analysis of North Vietnam's capacity to continue to wage war, one of the studies requested by Dr. Kissinger in his memorandum of 15 April. The report is scheduled to be discussed at an early meeting of the SRG.

/s/ Richard Helms

Richard Helms

Attachment:
ER IM 71-88
Copy No. 3

10 MAY 1971

(DATE)

SECRET

FORM NO. 101 REPLACES FORM NO. 101
AUG 54 WHICH MAY BE USED.

(47)

SECRET

MEMORANDUM FOR: Dr. Henry A. Kissinger

Attached are two copies of the analysis of North Vietnam's capacity to continue to wage war requested in your memorandum of 15 April. I am also sending copies of the study to the SRG principals and to General Bennett and Ray Cline.

/s/ Richard Helms

Richard Helms

Attachment:
ER IM 71-88
Copies 1 & 2

10 MAY 1971

(DATE)

SECRET

FORM NO. 101 REPLACES FORM NO. 101
AUG 54 WHICH MAY BE USED.

(47)

Identical Memos to:

Admiral Moorer Copy 4
U. Alexis Johnson Copy 6
The Hon. Wm. Sullivan Copy 7
General Vogt Copy 8
General Bennett Copy 9
The Hon. Ray Cline Copy 10

NOTE: Copy No. 5 - Secretary Laird
via SAVA

MEMORANDUM FOR: Ch/DD/P/FE

Attached is a study on DRV capability to continue with the war prepared at Kissinger's request for review by the SRG.

Deputy Director
Economic Research

Attachment:
ER IM 71-88
Copy No. 20

~~13 May '71~~
(DATE)

FORM NO. 101 REPLACES FORM 10-101
1 AUG 54 WHICH MAY BE USED.

(47)

MEMORANDUM FOR: D/OCI

Attached is a study on DRV capability to continue with the war prepared at Kissinger's request for review by the SRG.

Deputy Director
Economic Research

Attachment:
ER IM 71-88
Copy No. 16

~~13 May '71~~
(DATE)

RM NO. 101 REPLACES FORM 10-101
AUG 54 WHICH MAY BE USED.

(47)

MEMORANDUM FOR: Acting DDI

Attached is a study on DRV capability to continue with the war prepared at Kissinger's request for review by the SRG.

Deputy Director
Economic Research

Attachment:
ER IM 71-88
Copy No. 12

~~13 May '71~~
(DATE)

FORM NO. 101 REPLACES FORM 10-101
AUG 54 WHICH MAY BE USED.

(47)

MEMORANDUM FOR: DDCI

Attached is a study on DRV capability to continue with the war prepared at Kissinger's request for review by the SRG.

Deputy Director
Economic Research

Attachment:
ER IM 71-88
Copy No. 11

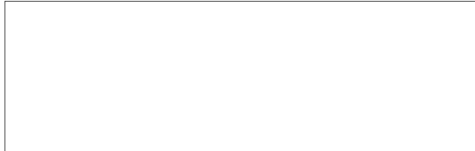
~~13 May '71~~
(DATE)

MEMORANDUM FOR:

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Attached are two copies of the analysis of North Vietnam's capacity to continue to wage war requested in Dr. Kissinger's memorandum of 15 April.

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Attachment:

ER IM 71-88

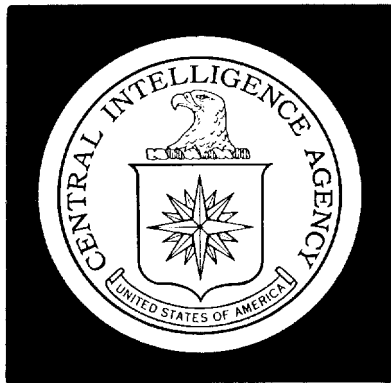
Copy Nos. 21, 22

13 May 1971
(DATE)

M NO. 101 REPLACES FORM 10-101
UG 54 WHICH MAY BE USED.

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DIRECTORATE OF
INTELLIGENCE

Intelligence Memorandum

North Vietnam's Capability To Continue To Wage War

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ER IM 71-88

May 1971

Copy No.

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
14 May 1972

INTELLIGENCE MEMORANDUM

North Vietnam's Capability
To Continue To Wage War

Introduction

1. The purpose of this memorandum is to assess North Vietnam's physical and material capabilities to continue with the war. The analysis focuses primarily on Hanoi's ability to continue to provide the human and logistic resources needed to support increased combat activity against Allied forces. The parameters of the analysis are those provided in our recent analyses of North Vietnam's strategic options through 1972.

2. The manpower requirements range from the 100,000 infiltrators needed to support a continuation of the war at the low level characteristic of 1970 to the maximum requirement of 250,000-300,000 needed to support a general offensive throughout South Vietnam and Cambodia. The logistic inputs to support the same strategies range from 66,000 tons annually for the low combat strategy to an estimated 80,000-88,000 tons for the general offensive strategy.

3. These parameters are used as an expression of the maximum strains that might be put on Hanoi's capabilities. It should be remembered that as US forces withdraw, both the logistic and manpower inputs needed for any of Hanoi's strategy options will decline.

4. With the exception of its manpower, Hanoi has few of the resources needed to support the war. Consequently, the analysis also presents a brief survey of the general economic situation in North Vietnam and the role of North Vietnam's Communist allies in providing military and economic aid.

I. Impact of the War on North Vietnam's Manpower

5. During the past six years, Hanoi has had to shoulder an increasingly heavy burden in its manpower commitment to the war. To put this burden into perspective, we have related Hanoi's military manpower requirements to its reserves of physically-fit manpower. The analysis then considers the extent to which Hanoi's manpower reserves could continue to support its strategy options.

Requirements Versus Reserves, 1965-70

6. Approximately 1 million North Vietnamese men were inducted into military service during 1965-70, a result of both the substantial buildup in the North Vietnamese armed forces and the heavy casualties sustained during the war. The size of the army was doubled in the period 1965-66 in response to the massive increase in the US presence in South Vietnam and the bombing of North Vietnam. Continued heavy recruitment in 1967 and 1968 was in preparation for, and to offset the casualties resulting from, the major Communist offensives during 1968. In 1969 the rate of induction dropped sharply (see Table 1) as the Communists shifted to

Table 1

Estimated Number of Men Inducted
into the North Vietnamese Army, by Year

<u>Thousand Men</u>	
<u>Year</u>	<u>Total</u>
1965	155
1966	260
1967	185
1968	215
1969	80
1970	200
	(preliminary)

a protracted war strategy. In 1970 the induction rate rose again following the ouster of Prince Sihanouk of Cambodia and the extension of the war to the whole of Indochina, but it was probably still below the peak level of the 1966-68 period. As a result of these induction activities, North Vietnam's civilian manpower reserve during 1965-70 declined by about one-third to one-half, depending upon whether the reserve is defined as the 15-39 age group, from which draftees are known to have been taken, or the more narrow 17-35 age group, which is apparently the "legal" draft age category. The tabulation below illustrates the decline in the manpower reserve during 1965-70:

<u>Year</u>	<u>Thousand Men ^{a/}</u>	
	<u>15-39</u>	<u>17-35</u>
1964	2,000	1,600
1965	1,900	1,400
1966	1,700	1,200
1967	1,600	1,100
1968	1,400	900
1969	1,400	900
1970	1,300	800

a. Physically fit males, within the indicated age groups, who are not in the armed forces.

7. Although substantial drawdowns have been made from North Vietnam's manpower reserves, the remaining civilian pool is still quite large in relation to the size of North Vietnam's armed forces. In relative terms, Hanoi has managed to sustain the war with a much smaller commitment of manpower than has Saigon. As shown in the tabulation below, Hanoi's armed forces at about 600,000 are equal to only one-fifth the total number of males aged 18-39 in the population. This is less than the 46% committed by South Vietnam at present and selected other countries during World War II and the Korean War.

Country	Month/Year	Million Men		Percent in the Armed Forces
		Males 18-39	Armed Forces	
United States	Jul 45	24.7	12.1	49
United Kingdom	Jun 45	8.3	4.7	57
Germany	Jun 44	10.3	9.6	93
South Korea	Dec 53	3.1	0.7	23
North Korea	Dec 53	1.1	0.3	27
South Vietnam	Dec 70	2.4	1.1	46
North Vietnam	Dec 70	2.9	0.6	21

Future Manpower Requirements

8. The existing manpower reserve in North Vietnam is adequate to support any of the strategy options Hanoi might choose through 1972. If during the remainder of 1971 and 1972 Hanoi should stay with its protracted war strategy, its manpower requirements could be met by holding inductions* to 100,000 per year without any drawdown of its reserves. If, however, Hanoi were to embark on a course that would, as in 1968, require the commitment of 250,000 to 300,000 inductees, the reserve would decline substantially, as shown below:

Thousand Men						
Year	Entering Reserve <u>c/</u>	Leaving Reserve <u>d/</u>	Reserves at Year End			
			Low Combat Strategy <u>a/</u>		High Combat Strategy <u>b/</u>	
			Age 15-39	Age 17-35	Age 15-39	Age 17-35
1971	162	67-68	1,300	800	1,100	600
1972	166	65-66	1,300	800	900	400

- a. Supported by induction of 100,000 men.
b. Supported by induction of 300,000 men.
c. At age 15.
d. Including those reaching age 40 and those leaving the reserve through death or decline in physical fitness.

* Inductions are equated in this analysis with infiltration on the assumption that only nominal changes would be made in the size of the armed forces kept within North Vietnam.

9. These calculations undoubtedly overstate Hanoi's capabilities. There probably is a hard core of physically fit males of draft age who would not be subject to induction except in an all-out emergency, such as an invasion of North Vietnam. This would include the most essential people in the economy and some of the ethnic minority group members unsuited for military service because of language and cultural barriers. Further downward adjustments might be made to allow for the possibility that estimates of induction in 1965-70 might have been understated somewhat. These factors taken together would suggest that if the regime opted for a high level of combat and carried out such a strategy for a prolonged period of time, the reserve of draftable men would be very low by the end of 1972. However, it should be borne in mind that even in this extreme case, the regime would still have available for induction in 1973 a new crop of approximately 130,000 17-year olds and an even larger number if the pool were expanded to include youths below the 17-year age limit.

10. In sum, North Vietnam's civilian manpower pool could sustain indefinitely a continuation of low-level combat. A very high level of combat would make inroads on the pool but would not deplete it through the period of this analysis.

Hanoi's View of Manpower Constraints

11. Hanoi, of course, must look to other considerations than mere numbers in making any decision involving the commitment of its manpower. North Vietnam has provided an enormous input of manpower for the war in South Vietnam. During the period 1965-70, losses are estimated to have been on the order of 600,000 men. During the same period, when the able-bodied pool of manpower in the 15-39 age group should have grown by several hundred thousand, it has been reduced from 1.9 million to 1.3 million. The civilian labor force, estimated to have been about 9.4 million in January 1965, grew to only 9.9 million in 1971. Had there been no war, the labor force would have grown to an estimated 10.6 million. The burden of the loss fell almost entirely on the agricultural labor force and was less than the number of

men called to the colors only because of an abnormal increase in the female labor force. The wholesale call-up of able-bodied men no doubt had a qualitative as well as a quantitative effect on the labor force. The diversion of manpower to military service combined with the fact that the economy has not yet recovered fully from the disruptions caused by bombing explain why gross national product (GNP) in 1970 was only \$1.4 billion, some \$0.2 billion below the 1964 total. Had there been no war, GNP could have been up by \$0.5 billion to an estimated \$2.1 billion by 1970, a substantial portion of which would have been due to the normal growth of the labor force.

12. By any standard these are losses which must not be viewed lightly in Hanoi. The heavy manpower losses sustained during the 1968 offensives were a major factor in the decisions to adopt the protracted warfare strategy of 1969-70. Despite the past drain on manpower, there is no convincing evidence that Hanoi has decided that the manpower costs of the war are too high a price. There is, in fact, evidence that North Vietnam is willing to continue inputs at high levels and if necessary to augment them. There has been abundant evidence during the past year of an acceleration in the recruitment and conscription of soldiers, and several such "conscription" drives have been carried out in recent months. The regime has specifically reiterated the need to build up "reserves" in support of the military activity in the south. We cannot judge specifically what price Hanoi would be willing to pay in manpower terms, but we doubt that it would be as high as that paid in 1968.

13. The weakening of public morale as the human costs of the war are increasingly brought home to the people could also be a factor deterring the regime's mobilization plans, but most signs we observe point to the contrary.

14. While we have never been confident of our ability to gauge with precision morale problems in North Vietnam, there are definite periods in which the regime manifests heightened concern about such problems -- either by passing new

security regulations or by devoting unusual propaganda attention to issues that seriously affect morale. The reports of captured prisoners infiltrated from the North also help over time to identify problem areas and issues. None of these barometers has registered any significant change in the past six months, and we, therefore, do not believe morale considerations are a significant constraint on Hanoi today. The morale problems that are visible in North Vietnam reflect malaise and indifference rather than open defiance and circumvention. Such problems have been with the North Vietnamese for years but have never reached the level where they imposed a constraint on the regime's ability to prosecute the war.

15. Even without the charisma of Ho Chi Minh and in the face of new and unusual demands for support of essentially foreign wars, the Hanoi regime continues to demonstrate a remarkable ability to get young men into the armed forces, to keep its working population plugging away for small material reward, and in general to extract a whole host of sacrifices without giving much in return. The post-Ho leadership is paying lip service to the need for improvements in living conditions, allowing the peasant to keep more of his grain, giving the factory worker piece wages, and in general looking the other way in the face of most minor indiscretions and infractions of law. To the outsider, the North Vietnamese people seem reasonably content with what they get. There are continuing reports of corruption, malingering, draft dodging, and plain inefficiency throughout the country, but the evidence suggests that the severity of the problem is fairly constant and the regime is prepared to tolerate this level.

North Vietnam's Military Training Capability

16. Perhaps the most direct limitation on North Vietnam's ability to support the large manpower commitment implied by the "general offensive" strategy is the capability to train recruits. North Vietnam conducts basic training for recruits both in full-time training units and in regular infantry units that are given a partial responsibility for training. The extent to which the latter units are used for basic training would

depend on requirements during any given period, but the use of these units gives flexibility to the army's capacity for training. The three regular training divisions and one training group have an estimated capacity to train slightly more than 25,000 recruits in one training cycle, or an annual capacity to train over 100,000 recruits in a three-month training cycle. The nine regular infantry divisions and five regular independent infantry regiments probably could train as many as 140,000 recruits annually and still perform their primary offensive or defensive mission. In addition, most recruits destined for specialized units, such as artillery and antiaircraft artillery, receive their basic training in these specialized units. Thus the estimated upper limit for providing basic training to new recruits would be on the order of 250,000 annually. If Hanoi were to opt for the general offensive strategy, at least a year and possibly more would elapse before all the troops necessary to support such a strategy could be adequately trained for combat. The apparently high rate of induction in 1970, however, would indicate that North Vietnam may be well along in its military training programs.

II. The Rear Supply Base

17. A major and essential part of the supplies with which the enemy has waged war in southern Laos, South Vietnam, and Cambodia must come from or through North Vietnam. The relatively modest tonnages directly related to the war-making capability of the enemy forces in these theaters are estimated for the 1971-72 period at 66,000 tons annually for the low combat strategy and at some 80,000-88,000 tons for the general offensive strategy. Some of these supplies will be provided by North Vietnamese industry and agriculture, but much will come from North Vietnam's allies -- the USSR and Communist China.

18. North Vietnam's capacity for the production of war-making and war-supporting goods is small. The ordnance branch of industry produces a limited number of light infantry weapons, mortars, grenades, and some ammunition, but no other types of military hardware. From the few captured weapons [redacted]

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[redacted] and activities described in open literature, it is evident that the ordnance industry is primarily engaged in repair of weapons and only nominally engaged in production. Domestically produced war-supporting goods include foodstuffs, materials for uniforms, and pharmaceuticals. Repair shops of the machine building industry are capable of maintaining all forms of transportation used to carry men and supplies to the south, but the country cannot produce the large quantities of vehicles required by the war effort.

19. Thus North Vietnam is heavily dependent on foreign aid from Communist countries. During 1965-70, imported foodstuffs accounted for as much as 15% of annual food supplies; virtually all military equipment had to be imported; and the lack of resources or of domestic capability necessitated imports of all the petroleum, vehicles, steel, and most of the machinery that was needed. Reconstruction of bomb damage would be practically impossible without foreign technicians and imported industrial equipment.

20. Except for manpower to fill military induction requirements and to man the logistics pipeline, therefore, North Vietnam's economy contributed

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minor material resources to the war effort. A minimum viability in the economy is mandatory, however, to preserve order and stability in the country's social structure, to sustain an adequate standard of living for the populace, and to insure for the regime a relative degree of independence in the conduct of international affairs. In this regard the government's task is made easier by the simplicity of the economy, which is predominantly agricultural with a substantial small-scale industrial base and the nucleus of a modern industrial sector.

Current Status of the Economy

21. In the two years since the bombing halt, North Vietnam's economy has made modest overall advances. Although output has not yet reached the pre-bombing level, the economy is in a relatively better position now to contribute its share to the war in the south than it was two to three years ago. By the end of 1970, output had recovered to about 85%-90% of pre-bombing levels in both industry and agriculture in contrast to the low points of 65% for industry in 1967 and 80% for agriculture in 1968. GNP increased by about 6% in the past year, reaching an estimated \$1.4 billion, or 90% of the GNP in 1964 of \$1.6 billion. At the current growth rate, total output could reach pre-bombing levels in two more years.

22. Hanoi has not made restoration of the economy a first-priority item, reflecting both the concentration on the war and, obliquely, the relative unimportance of the domestic economy to North Vietnam's ability to continue waging war. The slow rate of recovery may also be attributed to a combination of factors such as the drain of trained manpower into military service, failure to eliminate production bottlenecks, the inefficiencies resulting from dispersal of industry, and a reluctance to rebuild without assurances that the bombing will not be renewed.

Industry

23. Recovery in industry continues to be hampered by slow progress in repairing damage to modern plants, particularly electric power stations. The gross value of industrial output, however, reportedly

increased by 5.5% in 1969 and about 6% in 1970, bringing total industrial output to an estimated 85% of the 1964 level. Output of local industry, which contributed about one-half the value of total industrial output prior to the bombing, reportedly increased during the past year by 4.3%. The decline and subsequent partial recovery of production in some of the modern industrial branches is shown in Table 2.

Transportation

24. Steady improvement and expansion of transportation facilities continued in 1970.* Enlargement of shipping berths and new warehouses at the port of Haiphong neared completion. A substantial railroad realignment project was finished on a ten-mile section of the Dong Dang-Hanoi line, near the border with Communist China. In the Panhandle of North Vietnam, construction continued on new branches and extensions of the two petroleum pipelines extending into Laos. In addition, a new and larger pipeline system was begun in the northern part of the country near Hon Gai. The type of construction involved suggests that the system will be a permanent oil transport medium, providing a possible alternative to the current oil import procedure at Haiphong.

Labor and Productivity

25. Efforts are being made to augment the labor force in the face of continued manpower drains. College and vocational students are required to engage in production on a part-time basis, and a conference was called in February 1971 to mobilize more women for the labor force. In addition, until troops are sent out of North Vietnam they are required to take part in construction, industrial production, and agricultural harvests.

26. Much stress also was placed on reducing the inefficiencies engendered by decentralization and

* Further discussion of the buildup of logistic facilities is presented in Section IV.

Table 2
Indicators of Industrial Output in North Vietnam

	25X1					
	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
	Million Kilowatt Hours					
Electric power	570	520	300	350	450	510
	Thousand Metric Tons					
Coal	4,000	3,600	2,500	2,800	2,800	2,900
Cement	660	665	200	120	250	330
Apatite	853	350	200	250	250	350
Chromite ore	12	Negl.	Negl.	5	3	2
Iron ore	400	300	80	30	30	100
Pig iron	200	150	40	15	15	50

lax management practices of the bombing years. Criticism of low labor productivity began in 1968 and rose to a crescendo in 1970. The regime is trying to improve the situation by stimulating labor and management to greater efforts. Wage schedules are being reviewed to reflect skill and effort more realistically. In industry and construction, piecework wages have been instituted and probably will spread rapidly. Plans also call for a transfer of people from administrative duties to production activity.

Agriculture

27. Agricultural output rose in 1970, with output of milled rice estimated at 2.9 million tons, about 7%-8% above output in 1969 and not far short of the 3.0 million tons produced in 1965. Production of subsidiary food crops is believed to have paralleled the recovery in rice production. The regime has been only marginally successful in getting the peasants to resume cultivation of industrial crop acreage left fallow during the bombing years, but the regime in 1970 claimed increases in acreage as well as yields of a number of crops in this category, including peanuts, sugar cane, tobacco, and cotton.

III. Support From North Vietnam's Allies

28. Imports from Communist countries, financed primarily by credits and grants, have provided critical support for North Vietnam's industrial development program and for reconstruction of bomb-damaged facilities, as well as for maintaining minimum standards of living for the populace. During 1955-64, Communist economic aid amounting to \$950 million financed about two-thirds of North Vietnam's imports and provided the capital and goods necessary for the development of North Vietnam's modern industrial base (see Table 3). During 1965-70, economic aid in excess of \$2 billion financed about 90% of North Vietnam's imports. In addition to developmental aid, North Vietnam has had to rely heavily on commodity assistance to offset shortfalls in domestic output and to maintain an adequate level of consumer welfare. Imports of foodstuffs soared from less than 80,000 metric tons in 1966 to nearly 800,000 tons in 1968 when imports provided nearly one-sixth of North Vietnam's total food supply. Imports of metals and metal products, machinery and equipment, and transportation equipment more than tripled in quantity and rose even faster in value during 1965-70.

War-Making Goods

29. Estimated deliveries of military aid in 1970 fell to \$155 million from \$225 million in 1969, continuing the downward trend from the 1967 peak of \$650 million. Communist China for the first time became the predominant supplier of military aid as deliveries from the USSR dropped even more precipitously than deliveries from China. China provided about \$85 million of military aid in 1970, accounting for about 55% of the total, while Soviet aid amounted to about \$70 million. The East European Communist countries continued to supply only negligible amounts of military aid. Military aid from China in 1970 was down to about 60% of the 1967 peak level of \$145 million, while Soviet military aid was less than 15% of its 1967 peak level of \$505 million.

Table 3
Estimated Communist Aid to North Vietnam

	Million US \$							
	1954-64	1965	1966	1967	1968	1969	1970 ^{a/}	Total
Economic aid	950	150	275	380	480	470	535	3,240
USSR	365	85	150	200	240	250	360	1,650
Communist China	455	50	75	80	100	90	95	945
Eastern Europe	130	15	50	100	140	130	80	645
Military aid ^{b/}	140	270	455	650	390	225	155	2,290
USSR	70	210	360	505	290	120	70	1,625
Communist China	70	60	95	145	100	105	85	660
Eastern Europe	Negl.	Negl.	Negl.	Negl.	Negl.	Negl.	Negl.	5 ^{c/}
Total aid	1,090	420	730	1,030	870	695	690	5,530
USSR	435	295	510	705	530	370	430	3,275
Communist China	525	110	170	225	200	195	180	1,605
Eastern Europe	130	15	50	100	140	130	80	650

a. Preliminary.

b. Military data show value at Soviet foreign trade prices of weapons, other military equipment, and ammunition. They exclude aid for the construction of military installations and defense-related facilities.

c. The cumulative value of deliveries from Eastern Europe.

30. Two-thirds of the estimated deliveries in 1970 consisted of ammunition, one-fifth was ground force equipment and the remainder air defense equipment, missiles, and vehicles assigned to the armed forces. China's primacy as a supplier of military aid in 1970 reflects its predominance as a supplier of ground force equipment and the changing character of North Vietnam's needs. Ammunition and ground force equipment accounted for more than four-fifths of total military aid deliveries in 1970. The USSR, which enjoys a much higher level of technical sophistication than China, was the main supplier of North Vietnam's missiles and air defense equipment during the bombing period, but the bombing halt caused a sharp cutback in deliveries of this type of equipment. In the unlikely event the USSR were unwilling to meet a demand for increased deliveries of ground force equipment, China is quite capable of satisfying North Vietnam's needs either out of current production or its own stockpiles. Estimated Chinese deliveries of \$24 million of ground force equipment in 1970 were only half the level of 1969 deliveries and less than 10% of China's estimated production of such equipment in 1970 (see Table 4).

War-Supporting Goods

31. Among the war-supporting materials and equipment supplied in 1970 to North Vietnam by Communist countries, chiefly the USSR and Communist China, were 360,000 tons of petroleum products, 7,000 tons of explosives, 1,800 tons of pharmaceuticals, and 5,100 trucks

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32. Deliveries of economic and military aid have served to insure adequate stockpiles of essential materials as well as to meet current requirements. Although no precise quantification of North Vietnam's reserves of essential economic or military goods is available, there is a great deal of evidence to support the general conclusion that stockpiles in general are sufficient to satisfy requirements for at least six months. Except for food and fertilizer, Hanoi probably has ample supplies of economic goods. For example, it appears likely that inventories of trucks and other war-supporting material are maintained at levels sufficient to permit drawdowns to meet any foreseeable contingencies. Petroleum supplies are estimated to be equivalent roughly to three months' consumption.

Table 4

Communist Military Aid Deliveries to North Vietnam
by Donor and Type of Equipment

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	Million US \$ ^{a/}											
	1965		1966		1967		1968		1969		1970	
	USSR	China	USSR	China	USSR	China	USSR	China	USSR	China	USSR	China
Total ^{b/}	210	60	360	95	505	145	290	100	120	105	70	85
Ammunition ^{c/}	70	33	164	41	275	94	164	62	37	37	49	53
Missiles	6	0	33	0	120	0	34	0	6	0	3	0
Air defense equipment	118	10	137	13	95	20	81	7	60	17	5	4
Ground force equipment	7	11	4	35	11	25	4	30	9	48	4	24
Naval craft	0	2	0	2	0	4	Negl.	1	Negl.	0	0	0
Trucks and other vehicles ^{d/}	3	3	2	2	4	4	2	2	6	1	7	6
Other	4	0	18	0	0	0	3	0	1	0	3	0

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a. The values are in Soviet foreign trade prices, the list prices charged for military hardware by the USSR under its aid agreements with non-Communist countries.

b. Individual commodity categories are rounded to the nearest \$1 million. Totals are rounded to the nearest \$5 million. Because of rounding, components may not add to the totals shown.

c. Ammunition is priced at \$4,000 per metric ton.

d. Estimates are for vehicles assigned to the armed forces. Vehicles used for military support purposes are excluded.

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[REDACTED]

Outlook

33. Both Moscow and Peking have indicated their willingness to continue deliveries of economic aid to North Vietnam and to expand deliveries if necessary. Agreements have been signed to provide economic, technical, and military assistance to North Vietnam through 1971 from all its major aid suppliers, [REDACTED]

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34. There is no doubt that Communist countries are capable of supplying Hanoi with whatever it needs to pursue the war at present levels or to expand the fighting to the point where either manpower or logistics constraints would come into play. For example, China delivered 150,000 tons of grain to North Vietnam in 1970, down 270,000 tons from the 1968 level because of a slight recovery in North Vietnam's production of rice and increased imports of wheat flour from the USSR. If Peking were to increase deliveries to the 1968 level, enough additional food would be provided, other things being equal, to offset the production that would be forgone by the withdrawal of 200,000 men from the agricultural labor force for military service.

35. While we know much less about the Soviet and Chinese Communist military assistance activities and plans than about their economic aid to North Vietnam, it seems clear that, without question, the Communist countries are capable of providing North Vietnam through mid-1972 with the military equipment needed to continue the war at present levels or to expand the action to the point where North Vietnamese manpower or logistics constraints would become operative. The 1970 level of military aid is less than 25% of the 1967 peak, and deliveries could quickly be expanded to meet any likely increase in the level of military activity. In the event that either of North Vietnam's major allies were to demur -- for political reasons -- from meeting Hanoi's economic and military supply needs for the type of war it is fighting in South Vietnam, the other could easily go it alone.

IV. North Vietnam's Logistical Base

36. During the past year and a half, the loss of the Sihanoukville route as well as the active air and ground challenges to the enemy's use of the Laotian Panhandle have placed important obstacles in the way of North Vietnam's support for its troops in Cambodia and South Vietnam. However, the lesson that the logistical history of the Indochina war has taught is that the enemy has been willing and able throughout to commit the necessary resources to maintain a viable, flexible, and sometimes redundant system through which to channel supplies to the combat arenas in South Vietnam, Cambodia, and Laos. Throughout the war, the Communists have worked continuously to build, maintain, and expand a complex overland logistical system capable of providing support to their forces in Laos, Cambodia, and South Vietnam. Even during the US bombing campaign in 1965-68, the system proved surprisingly durable: rapid repair and reconstruction of bombed structures and the new construction of other facilities enabled the enemy to weather the destruction and to meet logistical objectives. Since the bombing halt in the fall of 1968, the system has been improved so that at present, war-supporting supplies -- most of which are imported from other Communist countries -- are moved quickly and efficiently to dispersed storage areas throughout North Vietnam, particularly the southern part of the country, which present few lucrative targets for air attacks.

37. Improvements to the port of Haiphong now allow berthing space for some 11 ships, and congestion, once a major difficulty, has been virtually eliminated. Since 1965 the railroad network has been increased by nearly 15% to about 750 miles, and the quality and quantity of rolling stock and locomotives have been increased. The North Vietnamese are now engaged in rebuilding the rail tramway system that will extend from the Vinh area, the terminus of the main rail network, some 58 miles to a rail-to-water transshipment point about 75 miles north of the DMZ.

38. The highway network was also extended during and after the bombing. About 1,500 miles of new roads added to the network since 1965 included at

least six new or improved border connections to Communist China and two new connections to southern Laos. The import of about 6,000 trucks annually since 1967 has been generally adequate to maintain the total truck inventory despite the heavy losses in North Vietnam and Laos.*

39. North Vietnam's inland water network has also been expanded and improved, and hundreds of steel-hulled barges, LCMs, and self-propelled fuel barges have been imported. North Vietnam's fleet of coastal vessels has also become a most important mode of moving supplies directly from Haiphong to the southern river ports at Vinh, Quang Khe, and Dong Hoi.

40. As mentioned earlier, the North Vietnamese have constructed and continually improved a petroleum pipeline network. The main north-south system, first observed in 1968, extends from Vinh through Mu Gia Pass into southern Laos. This system was recently linked within North Vietnam to a second system which extends from the river port at Quang Khe in a southwesterly direction into Laos west of the DMZ. The pipeline system frees a substantial number of trucks that would otherwise be needed to move petroleum into Laos and considerably reduces the vulnerability of moving petroleum to bombing

* North Vietnam currently maintains an extensive truck park within its borders. However, precise quantification of the total inventory is difficult owing to the paucity of rail import data and uncertainties about truck losses resulting from bombing. Nevertheless, [redacted] clearly that the Communists have sufficient vehicles to maintain the war effort, and there is every reason to believe that North Vietnam's allies will continue to provide a steady flow of vehicles to maintain the truck park.

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[redacted] has identified some 40 dispersed active storage and maintenance facilities containing some 6,800 cargo trucks. [redacted]

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[redacted] about 3,600 trucks in these two cities. Thus the 40 facilities and the two cities alone contain some 10,400 trucks. On the basis of this evidence, we estimate that the total inventory could be on the order of 15,000-20,000 trucks.

and adverse weather. The system has an estimated length of more than 250 miles and a theoretical throughput capacity of up to 2,000 tons per day. This capacity exceeds total nationwide consumption and is far in excess of present needs in the area.

41. The substantial effort made by the Communists during the past decade to maintain and improve their North Vietnam logistics base has been largely successful. Even during the bombing campaign, the rear base functioned effectively to supply forces in Laos and South Vietnam. The system is flexible and elaborate with considerable built-in redundancy, and its capacity far exceeds current use. Through 1972 it will continue to be upgraded and focused on support of out-of-country combat forces. With sustained imports of military and transport equipment from other Communist countries, the system should continue to be successful in moving supplies southward.

Conclusions

42. Assuming a determination on its part to persist with the war in Indochina, North Vietnam's capability to do so depends heavily on sustaining a flow of men and supplies to the military fronts in Indochina. In addition to providing overall leadership, Hanoi's principal contributions to the war have been its inputs of trained military manpower and the organization and maintenance of a viable logistic system. The military supplies and war-supporting goods needed to carry on the war are provided almost exclusively by the USSR and Communist China.

43. In terms of either human or material inputs the burdens imposed on Hanoi over the past six years have been manageable and, for the most part, acceptable costs. Moreover, the resources available to North Vietnam for continuing with the war are clearly adequate to support any of the strategic options that Hanoi's leadership might choose to follow through 1972.

44. North Vietnam's manpower resources continue to be adequate and could support a considerable military expansion. At the present time, there are from 800,000 to 1.3 million physically fit men in the civilian reserves, depending on whether the age span of the pool is defined as ranging from 17 to 35 or from 15 to 39. The military induction necessary for the enemy to continue to support the low levels of fighting in the south characteristic of 1970 would result in no drawdown of this pool. The considerably larger induction necessary to support a general offensive in South Vietnam and Cambodia would cause the civilian reserve to drop by some 200,000 by the end of 1971 and by a similar amount by the end of 1972 if the high rate of induction were maintained throughout the next year. A possible limitation on Hanoi's choice of a high combat strategy during the next year or so might be the problems inherent in the annual recruitment and training of the 250,000-300,000 troops which would be required. However, the apparently high rate of induction in 1970 -- on the order of 200,000 men -- would indicate that North Vietnam may be well along in its military training program.

45. Although Hanoi has the raw capability to make an annual commitment of as much as 300,000 personnel over the next two years at least, other factors may dampen enthusiasm for such an undertaking. These include the fact that at least 600,000 North Vietnamese have already been killed in this war. In addition, an offensive strategy requiring the commitment of as many as 300,000 men would undoubtedly involve heavy casualties. We cannot judge specifically what price Hanoi would be willing to pay in manpower terms, but we doubt that it would be willing to undertake a sustained offensive throughout South Vietnam and Cambodia that cost as much as the 1968 offensives.

46. North Vietnam provides only a small part of the military and war-supporting goods needed to carry on the war -- and some of the necessary food, uniforms, and medicines. North Vietnam's economy, partially recovered from the bombing years, is fully capable of continuing this limited level of support without difficulty.

47. The major part of the supplies with which the enemy has waged war in Indochina has come from the USSR and Communist China. These countries should find little difficulty in continuing -- or even increasing -- such military and economic assistance related to the war. During 1965-70, North Vietnam's allies provided economic aid in excess of \$2 billion and military aid of a similar order of magnitude. Estimated economic aid for 1970 of \$535 million is about 14% above the 1969 level, and, while it represents a record high, it in no significant way taxes the economic capabilities of the donor countries. Military aid for 1970 -- \$155 million -- is only about one-fourth of the record high for such assistance provided.

48. Finally, the successful implementation of Hanoi's strategies will, in the future, as in the past, depend upon the enemy's ability to move supplies to the military fronts. While the enemy faces more complex logistical problems now than at any time in the past several years, it seems likely that the system, both in North Vietnam and in the Laotian Panhandle, can continue to support the requirements of the battlefields.

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10 May 1971

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to Wage War

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MEMORANDUM FOR: [REDACTED]

Talked with [REDACTED] about
this arrangement. As far as our
Blue Notes are concerned, it will
not hold water. Executive Registry
said they sent out the DCI's
material per "his" instructions
not [REDACTED]

14 May '71
(DATE)

FORM NO. 101 REPLACES FORM 10-101
1 AUG 54 WHICH MAY BE USED.

(47)

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12 May 1971

MEMORANDUM

SUBJECT: Routing of Publications to the White House

1. Whenever any of the Production Offices have finished intelligence to be sent to Henry Kissinger, it should be sent in care of [] our man on Kissinger's staff. Anything meant for Dr. Kissinger should be clearly labeled as such, but sent to [] who will expedite its placement in Kissinger's hands. This procedure is to be followed even if the publication should be covered by a personal note from the Director to Kissinger.

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2. Mail sent [] should be addressed:

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[]
International Situation Room
The White House

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[]
Chief
DDI Executive Staff

MEMORANDUM FOR: D/DOER

Attached is methodologies you requested. You will note that we have in past depended on DIA for expenditure rates. This means that the imports could be overstated (since DIA includes in expenditures a factor for in-country air losses and a higher BDA for Laos). However, stockpiling in North Vietnam is not included in the calculation so some offset is involved there. [redacted] is the keeper of the books on this one and can speak to the details.

[redacted]

10 May 1971

(DATE)

FORM NO. 101 REPLACES FORM 10-101
1 AUG 54 WHICH MAY BE USED.

(47)

Methodologies Involved in Estimating
Equipment and Munitions Deliveries
to North Vietnam

The data for estimates on military aid to North Vietnam are provided by DIA. The following are the various methodologies used to determine the size of these imports and their sources.

A. Quantity of Imports

1. Missiles - the estimate for the imports of surface-to-air missiles (SAM's) is based on the expenditure level during the year. It is assumed that any missile that is fired is replaced in three months. Pilot sightings plus [redacted] provide a very accurate estimate on the number of firings. The methodology does not allow for changes in inventory. However, the size of the stock compared to the total number of missiles fired since 1965 would probably be small, so that although there might be some inaccuracies from year to year, the overall estimate from the beginning of the war (7,735 missiles valued at \$195 million) is probably very accurate.
2. Air Defense Equipment - aircraft imports are estimated from changes in inventory as derived from photography. Excellent photographic coverage is provided and estimates for aircraft imports are probably the most accurate.

Estimates for radar and antiaircraft artillery are based on changes in inventory for all of Indochina [redacted]

[redacted] Coverage is more difficult than for aircraft because of the greater area which needs to be covered and also because of

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the fact that these pieces can easily be camouflaged. Theoretically, the methodology is good for estimating radar and antiaircraft artillery, but in reality the estimate is only as good as the coverage which has been less extensive over the last few years.

3. Ammunition - ammunition imports are based on estimated expenditure rates* plus estimated losses from Allied air and ground attacks. Stockpiles are assumed to remain the same. The estimate for ammunition imports is subject to a large margin of error. Errors in estimating expenditure rates and losses, or variations in stockpiles, would lead to errors in estimating imports.

The problem with stocks is especially serious. Because of the difficulty in resupplying stockpiles, there are probably great fluctuations in their level from year to year. Thus ammunition imports may be greatly over or under-rated in any one year, depending on the change in stocks and barring the possibility of compensating errors in expenditure rates and losses.

4. Ground Forces Equipment - estimates for ground forces equipment are based on estimated requirements. Requirements are derived from such factors as the level of infiltration during the year, the level of fighting, the need to replenish weapons caches lost to Allied ground operations and the need to replace weapons lost through normal attrition. No allowances are made for changes in stocks. This estimate is subject to a substantial margin of error.
5. Naval Craft - imports of naval craft are based on changes in inventory as determined from photography. The estimates are probably accurate within a fairly narrow margin of error.

* Throughout Indochina; Based on DIA expenditure statements

6. Other - this includes primarily trucks for military use. The estimate is derived by applying a fixed percentage to total truck imports. Any error in estimating total trucks or in estimating what share is allocated to the military would cause inaccuracies in this estimate.

B. Source of Imports

1. Donor Countries - production capabilities

[redacted] where available provide the basis for estimating the type and amount of military aid each country supplies to North Vietnam. For example, SAM's are not produced in Communist China, so that all SAM's are credited to the USSR. The allocation of small arms as to type and amount depends to a large extent on the mix of captured weapons. This hypothesis presumes that the mix of weapons captured in South Vietnam and Cambodia is the same as delivered to North Vietnam.

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Estimated Ammunition Deliveries to North Vietnam
1965 - 1970

	Thousand Metric Tons		
	<u>From All Countries</u>	<u>USSR</u>	<u>Communist China</u>
Total	<u>264</u>	<u>186</u>	<u>78</u>
1965	25	17	8
1966	50	40	10
1967	91	68	23
1968	55	40	15
1969	18	9	9
1970	25	12	13

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DIRECTORATE OF
INTELLIGENCE

Intelligence Memorandum

Economic Developments In North Vietnam In 1970

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April 1971

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
April 1971

INTELLIGENCE MEMORANDUM

Economic Developments In North Vietnam In 1970

Introduction

1. North Vietnam's reconstruction efforts immediately following the bombing halt of November 1968 were focused on repair of transportation facilities and military installations, much of which was completed in 1969. By the beginning of 1970 the regime was in a position to give increased attention to restoration of other sectors of the economy. This memorandum reviews economic performance and economic policy developments in North Vietnam in 1970, particularly in the context of emerging trends in the post-bombing period.

Summary and Conclusions

2. In the two years since the bombing halt, economic reconstruction in North Vietnam has reached the half-way mark. By 1970, output had recovered to about 85%-90% of pre-bombing levels in both industry and agriculture in contrast to the low points of 65% for industry in 1967 and 80% for agriculture in 1968. At the current growth rate of around 6%, total output will not reach the pre-bombing levels for two more years.

3. The slowness of recovery since the bombing halt is primarily due to war-related disruption. Large-scale recruitment of men into military service, while partly offset in quantitative terms by an increase in the employment of women, has caused

Note: This memorandum was prepared by the Office of Economic Research and coordinated within the Directorate of Intelligence.

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a deterioration in the quality of the labor force and contributed to the sharp decline in labor productivity. Decentralization of industry to escape the bombing has resulted in inefficient use of machinery and breakdowns in distribution of materials and products. Electric power capacity, greatly cut by the bombing, has been a bottleneck to industrial expansion. And in all probability the large shipments of foodstuffs and other consumer goods from the Communist countries, which have made up for North Vietnamese shortfalls, have weakened the incentive for the North Vietnamese to accelerate the recovery program.

4. Although developments in the war during 1970, to which North Vietnam reacted by sharply increasing military recruitment, probably had some unfavorable impact on the economy and may have further postponed consideration of long-range development plans, there is no indication of substantial changes in priorities. Economic development and the "building of socialism" have taken a back seat to fighting the war and continue to do so. As the war goes on, North Vietnam is forgoing year after year of economic growth. Its national product is probably some \$700 million less than it would be in the absence of the war. But with economic support from Communist countries, it is managing to cover basic needs and make slow progress.

Discussion

Overall Output

5. North Vietnam's economy made modest overall advances in 1970, but output has not yet reached the pre-bombing level. Gross national product (GNP) is estimated to have increased 6%, or about the average rate achieved in the seven-year period immediately preceding the war. GNP is estimated to have reached roughly \$1.4 billion, about 90% of the estimated 1964 level of around \$1.6 billion.

6. Hanoi has not made restoration of the economy a first-priority item. Thus the rate of recovery has been extremely slow and is attributable to a combination of factors. The labor force in

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1970 was actually slightly larger than at the outset of the war despite the drain of manpower into military service, so that output per worker evidently was far below the prewar level. The low level of productivity probably reflects largely the failure to eliminate some bottlenecks, especially in electric power, the qualitative decline that must have taken place in the labor force as a result of the drain of able-bodied men and skilled labor into military service, and the inefficiency resulting from the dispersal of industry carried out to minimize the impact of bombing.

7. Had there been no war, GNP probably could have grown some 5% a year during 1965-70 and reached \$2.1 billion, \$700 million more than the actual level. Gains in productivity alone (through capital formation and improved technology) would have pushed GNP up to perhaps \$1.9 billion. The remainder of the gap between output in 1970 and what it would have been without the war can be explained by the lack of normal growth in the labor force resulting from the diversion of an estimated 1 million men into military service during 1965-70.

Economic Policy

8. No major shifts in domestic economic policy were evident during 1970. The 1970 state plan remained basically unchanged from the 1969 plan. The one notable change was the reduced emphasis on expanding communication and transportation facilities -- presumably because of the substantial reconstruction and improvements already completed. Growth of agricultural production and the production of consumer goods by local industry were listed as the main tasks of the 1970 plan.

9. North Vietnam's economic goals during the post-bombing period have been characteristically modest. Annual plans usually call for improvement in all sectors of the economy but with no set targets, and since 1967, planning has been conducted solely on a yearly basis. Statements concerning plans and achievements in 1970 imply that the value of output of local industry was planned to increase by only 1% and for total industry by only 3%.

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10. In February 1970 a long article by Le Duan, Party First Secretary, laid out party guidelines for the country's future development. In discussing the North Vietnamese economy, he appeared to be defining long-range goals for a period of five to ten years. Le Duan's text placed more emphasis on heavy industry than other public commentary on economic goals, probably reflecting a longer range perspective. He did emphasize, however, that recovery of light industry and agriculture would have priority in the short term.

Agriculture

11. Agricultural output rose in 1970, with output of milled rice, estimated at 2.9 million tons, about 7.5% above output in 1969. This is not far short of the 3.0 million tons produced in 1965. Production of subsidiary food crops is believed to have paralleled the recovery in rice production. Since 1968 the regime has been only marginally successful in getting the peasants to resume cultivation of industrial crop acreage left fallow during the bombing years, but the regime claimed increases in 1970 in acreage as well as yields of a number of crops in this category, including groundnuts, sugar cane, tobacco, and cotton. The number of hogs was said to have reached an all-time high with an increase in average weight. The weather was generally normal in 1970, as in 1969.

12. Increases in agricultural production were attributed to greater acreage and wider use of high-yielding strains of spring rice, expansion of irrigation facilities, increased supply of nitrogenous fertilizer, and a number of institutional improvements, notably a new grain procurement directive issued in March 1970. The directive fixed delivery quotas for a period of five years as an incentive for peasants to produce. In previous years a successful harvest apparently often resulted in a higher government quota the following year. The agricultural labor force probably did not increase in 1970, because of the continued diversion of manpower into the military.

13. Rising production of food has resulted in a slight lessening of dependence on imports. Seaborne imports of food continued to decline in 1970

to 660,000 tons (about 12%-13% of consumption), compared with peak imports of 790,000 tons in 1968. Although the regime has made self-sufficiency in food a major target, food imports can be expected to remain at fairly substantial levels, at least as long as the war continues. The population is about 12% larger now than in the beginning of 1965 and is growing some 2% a year. To eliminate the need for imports of grain and other basic foods within two years, for example, food output would have to increase 20% -- probably an impossible task.

Industry

14. Recovery in industry continues to be hampered by slow progress in repairing damage to modern plants, especially electric power stations. The gross value of industrial output reportedly increased by 5.5% in 1969 and about 6% in 1970, bringing total industrial output to an estimated 85% of the 1964 level. Output of local industry, which contributed around one-half the value of total industrial output prior to the bombing, reportedly increased during the past year by 4.3%. During 1965-70, moreover, emphasis on expanding the local economy has resulted in a reported cumulative growth of almost 15% in local industry, while production in centrally controlled industry, which includes all large-scale plants, declined sharply. Production trends in some of the major heavy industrial items are shown in Table 1.

15. Reconstruction of electric power facilities in 1970 brought capacity to 70% of the pre-bombing level, compared with 65% in 1969 and a low of 40% at the end of 1967. Production of electric power reportedly increased by 13% in 1970 and reached an estimated level of 510 million kilowatt hours. However, the industry operates with virtually no margin of reserve capacity, and much of the equipment currently in service is badly in need of general overhaul. Shortages of generating capacity have made it necessary to ration power supplies, to stagger work shifts, and to restrict service to new consumers. Frequent press articles in 1970 blamed electric power shortages for unfulfilled industrial output goals, and only nominal improvement seems likely in 1971. The slow pace of

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restoration in the power industry may stem from a decision to limit reconstruction efforts at damaged thermal powerplants in favor of resuming construction on the large Thac Ba hydroelectric powerplant, being built with Soviet assistance, where work was halted during the bombings. Capacity of the Thac Ba plant will be greater than all the generating capacity out of operation at the end of 1967. When this project is completed, probably not before the end of 1971, present restraints on power supplies will be largely removed.

16. The coal industry, a major foreign exchange earner before 1965, continues to encounter production difficulties caused by bomb damage as well as a host of other problems. Production of coal reportedly increased by 3.2% in 1970, but output was only three-fourths of the pre-bombing level of 4 million tons. Presumably because of increased domestic consumption, however, coal exports declined to 370,000 tons in 1970, the lowest level in six years, compared with 430,000 tons at the height of the bombing in 1967 and 1,200,000 tons in 1965. At the end of 1970, damage to the Cam Pha coal-processing plant reportedly had been only two-thirds repaired, and two of the four coal-loading cranes in the port still were out of operation. Additional problems periodically aired in the press include poor management, low labor productivity, and equipment in disrepair. [REDACTED]

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[REDACTED] further increases in production will be small until there is wholesale replacement of obsolete mine equipment and modernization of coal transport and processing facilities. Exports may not recover until completion of a Polish-aided coal-processing plant -- now scheduled for 1973.

17. The tempo of construction at other damaged industrial facilities has been relatively unchanged over the past two years. The Haiphong Cement Plant, which was put out of operation in April 1967, has been restored to about 75% of its former capacity. Five of seven cement kilns in the plant currently are in service, but work on the remaining two was halted in August 1970 for unknown reasons. The Thai Nguyen Iron and Steel Plant was out of operation from early 1967 to mid-1970, when one of three blast furnaces apparently was test-fired, and subsequently was put into sustained operation late in the year. Restoration of the other furnaces

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and extensive remaining damage to the steel complex is likely to require several years. No attempt thus far has been made to reconstruct the Nam Dinh Textile Plant, the Co Dinh Chromite Concentrating Plant, or the Bac Giang Nitrogen Fertilizer Plant. Although the volume of general construction in 1970 was claimed to be greater than in 1969, construction projects were hampered by limited supplies of skilled labor, materials, and funds. Construction organizations were criticized especially for failure to complete projects on schedule, and hence plans for 1971 stress the completion of unfinished projects rather than initiation of new projects.

Transportation

18. Steady improvement and expansion of transportation facilities continued in 1970. Enlargement of shipping berths and new warehouses at the port of Haiphong neared completion. A substantial railroad realignment project was finished on a ten-mile section of the Dong Dang-Hanoi line, near the border with Communist China. This project involved construction of numerous tunnels and bridges in difficult mountainous terrain. The new section will replace the original line where steep grades and short-radius curves both slowed traffic and limited the number of rail cars in a train. In the Panhandle of North Vietnam, construction continued on new branches and extensions of the two petroleum pipelines extending into Laos. In addition, a new and larger pipeline system was begun in the northern part of the country. This latter pipeline extends about 26 nautical miles westward from Va Chai, near Hon Gai, toward an unknown destination that may be Hanoi or Haiphong. The type of construction involved suggests that the system will be a permanent oil transport medium, providing a possible alternative to the current oil import procedure at Haiphong. There is, however, no evidence yet of channel improvements or tanker mooring facilities in the area of Va Chai.

Labor and Productivity

19. Efforts are being made to augment the labor force in the face of continued manpower drains. During 1965-70 the civilian labor force increased

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by an estimated 2%, whereas without the war the increase would have been about 12%. College and vocational students will be required to engage in production on a part-time basis, and a conference was called in February 1971 to mobilize more women for the labor force. The percentage of women in the labor force as a percentage of all women aged 15 to 65 has increased only slightly. One offsetting factor to military induction, however, is that until troops are sent out of North Vietnam they are not entirely removed from the labor force and are required to take part in construction, industrial production, and agricultural harvests.

20. Much stress also was placed on reducing the inefficiencies engendered by decentralization and lax management practices of the bombing years. Criticism of low labor productivity began in 1968 and rose to a crescendo in 1970. In basic construction, it was admitted that the effectiveness of investments was wasted because construction took too long, projects were left unfinished, or quality was poor. Fixed assets in agriculture were said to have deteriorated. Wastage of raw materials, fuels, and semi-finished materials in industry exceeded prescribed norms. Utilization rates for machinery in the central machine building industry reportedly were only two-thirds of the norm.

21. While complaints such as these are hardly unusual in Communist countries, it is evident that North Vietnam does have a serious productivity problem. Industrial employment apparently is above pre-war levels while productivity is far lower. This is openly recognized by the regime, which sets productivity achievements in 1964 as goals to shoot at. There is ample evidence that vast amounts of machinery and equipment -- nearly all imported and paid for with aid from other Communist countries -- are used at a small fraction of their capacity, if at all. Machine tools, distributed to many small shops to repair trucks and other equipment, often lie idle. Small electric generators, imported to partly substitute for bombed out capacity in large electric powerplants, are not usable for many industrial purposes. Maintenance standards are poor.

Decentralization of industry has greatly complicated the distribution of materials and parts and contributed to the shortage of competent managers. East European countries have complained that the technicians they train are not being used effectively to apply their new skills.

22. Characteristically, the regime is trying to improve the situation by stimulating labor and management to greater effort. Wage schedules are being reviewed to reflect more realistically skill and effort. In industry and construction, piece-work wages have been instituted and probably will spread rapidly. Plans also call for a transfer of people from administrative duties to production activity. Such changes as these are unlikely to have much effect, however. Labor productivity probably will remain low until the main large-scale plants have been rebuilt and the men have returned to civilian work.

Foreign Trade and Aid

23. The total volume of North Vietnam's sea-borne imports during 1970 from Communist and Free World countries was about the same as in the previous year, although some shifts in composition took place (see Table 2). Imported foodstuffs declined by almost 100,000 tons, reflecting some improvement in domestic agricultural output. Petroleum imports declined slightly. The tonnages of general and miscellaneous imports rose by almost 15%, mainly as a result of increased imports of metal products, cement, and pyrites which are used in fertilizer production.

24. Imports of investment goods declined slightly in 1970 from the high 1969 level, as shown in the following tabulation, indicating that no acceleration took place in economic development efforts.

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	Million US \$					
	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Metal and metal products	9	18	18	23	28	34
Machinery and equipment	48	97	126	150	185	168
Transportation equipment	12	17	21	27	59	47
<i>Total</i>	<i>69</i>	<i>132</i>	<i>165</i>	<i>200</i>	<i>272</i>	<i>249</i>

25. North Vietnamese exports in 1970 remained at about the 1969 level. Exports of apatite, which were resumed in 1969 after virtually a three-year halt, increased sharply. Cement and coal exports, however, showed significant declines that probably stem from failures to restore production at a time when domestic construction and fuel requirements are increasing. Pig iron exports were absent for the third consecutive year. Exports of general and miscellaneous goods, mostly consumer items, increased.

26. Communist deliveries of economic aid to North Vietnam have hovered at roughly \$500 million annually for the last three years (see Table 3). Since 1965, exports to other Communist countries have generally covered less than 10% of imports, compared with one-third in the previous decade. The lack of resources or of domestic capability necessitates continued imports of petroleum, fertilizers, vehicles, steel, and most machinery. Reconstruction of bomb damage would be practically impossible without foreign technicians and imported industrial equipment.

27. Aid from Communist countries apparently will continue to provide military equipment for prosecution of the war, machinery and technicians for economic development, and commodities to make up for shortfalls in domestic output. Unlike past negotiations which involved a single negotiating team for all Communist aid and a time-span of about two months, the main trade and aid negotiations

for 1971 lasted from September 1970 to January 1971 and involved two separate North Vietnamese negotiating teams. The reason for this departure from past practice is unknown; it might have been an insistence by the donor countries on a more thorough justification of aid requests. Announcements concerning the 1971 agreements did not differ fundamentally from traditional statements, and as usual they made no mention of details concerning values or quantities.

28. The USSR contributed two-thirds of total economic assistance in 1970, maintaining its position as the primary aid donor. The share of economic aid supplied during the past year by Communist China amounted to 18%, and by Eastern Europe 15% (see Table 3). The only major shift in the source of imports during 1970 involved foodstuffs, most of which previously was supplied by Communist China. The USSR became the dominant supplier of foreign foodstuffs in 1970, providing about two-thirds of the total imported. Except for food, Communist China's deliveries remained typical of the past few years, including consumer goods, a variety of machinery, and other bulk commodities. Eastern Europe's contribution to North Vietnam continues to be in the form of specialized, relatively expensive machinery and equipment, the total of which almost equals the USSR's contribution. For the third consecutive year, military assistance has declined. Military aid deliveries during 1970 are tentatively estimated at \$155 million, a decrease of approximately 30% from the \$225 million delivered in 1969.

Consumer Welfare

29. Food and other consumer goods were possibly somewhat more plentiful in 1970 than in the previous two years, judging from the increase in agricultural output as well as the increase in output of local industry where most of the consumer goods are produced. Prices in the free market fluctuated within previously observed ranges, indicating no severe shortages. Statements by regime leaders concerning "belt tightening" were presented in the context of reducing wastefulness, rather than reducing the availability of consumer goods.

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30. Only nominal progress was made in rehabilitating housing damaged or neglected during the bombing. Although lipservice is paid to the need for more housing, the government definitely gives a higher priority to construction of transport and industrial facilities. Foreign assistance to education is devoted to training a large number of students in other Communist countries. However, the value of this training is lessened when returning students either are placed in inappropriate fields or have to undergo political reindoctrination that often removes them from the labor force for as long as one year.

Short-Range Prospects

31. The trends of the past two years are likely to continue in 1971. The 1971 economic plan eschews any overall growth target and appears to establish the same priorities as the previous two plans. If the weather is reasonably good, growth rates near last year's 6% can probably be maintained in industry and agriculture. Industrial growth may accelerate after the expected recovery of electric power capacity in late 1971. Other basic problems, however, including shortcomings in management and labor quality, are unlikely to be much improved until the war is over.

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Table 1
Indicators of Industrial Output in North Vietnam

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
	<u>Million Kilowatt Hours</u>					
Electric power production	570	520	300	350	450	510
	<u>Thousand Metric Tons</u>					
Coal	4,000	3,600	2,500	2,800	2,800	2,900
Cement	660	665	200	120	250	330
Apatite	853	350	200	250	250	350
Chromite ore	12	Negl.	Negl.	Negl.	Negl.	Negl.
Iron ore	400	300	80	30	30	100
Pig iron	200	150	40	15	15	50

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Table 2

North Vietnam: Seaborne Imports and Exports a/

	Thousand Metric Tons					
Cargo	1965	1966	1967	1968	1969	1970
<i>Total imports</i>	847	1,030	1,417	1,967	1,890	1,888
Foodstuffs	119	78	462	798	755	660
Fertilizer	162	227	150	155	151	202
Petroleum	170	201	247	388	375	361
Timber	15	14	13	26	37	14
General and miscellaneous	381	512	546	601	572	651
<i>Total exports</i>	1,713	1,168	573	694	573	581
Apatite	318	10	--	--	13	95
Cement	78	99	35	--	23	15
Coal	1,150	938	432	629	461	372
Pig iron	48	40	22	--	--	--
General and miscellaneous	120	80	84	66	76	98

a. Because of rounding, components may not add to the totals shown.

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Table 3

Estimated Communist Aid to North Vietnam

	Million US \$							
	<u>1954-64</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970 ^{a/}</u>	<u>Total</u>
Economic aid	<u>950</u>	<u>150</u>	<u>275</u>	<u>380</u>	<u>480</u>	<u>470</u>	<u>535</u>	<u>3,240</u>
USSR	365	85	150	200	240	250	360	1,650
Communist China	455	50	75	80	100	90	95	945
Eastern Europe	130	15	50	100	140	130	80	645
Military aid ^{b/}	<u>140</u>	<u>270</u>	<u>455</u>	<u>650</u>	<u>390</u>	<u>225</u>	<u>155</u>	<u>2,290</u>
USSR	70	210	360	505	290	120	70	1,625
Communist China	70	60	95	145	100	105	85	660
Eastern Europe	Negl.	Negl.	Negl.	Negl.	Negl.	Negl.	Negl.	5 ^{c/}
Total aid	<u>1,090</u>	<u>420</u>	<u>730</u>	<u>1,030</u>	<u>870</u>	<u>695</u>	<u>690</u>	<u>5,530</u>
USSR	435	295	510	705	530	370	430	3,275
Communist China	525	110	170	225	200	195	180	1,605
Eastern Europe	130	15	50	100	140	130	80	650

a. Preliminary.

b. Valued at Soviet foreign trade prices. Data refer exclusively to combat material, excluding aid designed for war-support purposes.

c. The cumulative value of deliveries from Eastern Europe.

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